

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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ANALYTICAL REPORT

Job Number: 280-3403-1

Job Description: Dalton PFC Analysis

For:

Dalton Utilities
1200 V.D. Parrott Jr. Parkway
Dalton, GA 30721

Attention: Ms. Dena Haverland



Approved for release.
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6/11/2010 3:01 PM

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06/11/2010

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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CASE NARRATIVE
Client: Dalton Utilities
Project: PFC Analysis
Report Number: 280-3403-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Receipt

The following report contains the analytical results for two soil samples received at TestAmerica Denver on May 12, 2010, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 8.9°C.

The samples arrived at the laboratory above the recommended temperature of 4 +/- 2°C. The client was notified on May 12, 2010.

No other anomalies were encountered during sample receipt.

PFC

Samples AB-1 #1 (280-3403-1) and AB-1 #2 (280-3403-2) were analyzed for PFC in accordance with SOP DV-LC-0012. The samples were prepared on 05/13/2010 and analyzed on 05/18/2010 and 06/05/10.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to high concentrations of target analytes, samples AB-1 #1 (280-3403-1) and AB-1 #2 (280-3403-2) had to be analyzed at dilutions. The reporting limits have been adjusted relative to the dilutions required.

Perfluorobutane Sulfonate (PFBS) and Perfluorotetradecanoic acid (PFTeA) failed the recovery criteria low for the MS and/or MSD of sample AB-1 #2 (280-3403-2) in prep batch 280-15209 (analytical batch 280-15981). The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. The acceptable LCS analysis data indicated the analytical system was operating within control.

Refer to the QC report for details.

No other difficulties were encountered during the PFC analyses.

All other quality control parameters were within the acceptance limits.

Percent Solids

Samples AB-1 #1 (280-3403-1) and AB-1 #2 (280-3403-2) were analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 05/12/2010.

No difficulties were encountered during the % solids analyses.

All quality control parameters were within the acceptance limits.

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-3403-1

SDG No.:	Instrument ID: LC_LCMS5	Analysis Batch Number: 15979	S. Coffey	6-11-12
Lab Sample ID: STD002 280-15979/2 IC	Client Sample ID:			
Date Analyzed: 05/18/10 10:34	Lab File ID: pc500E18004.d		GC Column: Eclipse+C18	ID: _____
COMPOUND NAME	RETENTION TIME	REASON	ANALYST	DATE
Perfluorotridecanoic Acid (PFTria)	7.86	Poor chromatography	bonnettj	05/20/10 12:45
Lab Sample ID: STD005 280-15979/3 IC	Client Sample ID:		GC Column: Eclipse+C18	ID: _____
Date Analyzed: 05/18/10 10:47	Lab File ID: pc500E18005.d			
COMPOUND NAME	RETENTION TIME	REASON	ANALYST	DATE
Perfluorotridecanoic Acid (PFTria)	7.85	Poor chromatography	bonnettj	05/20/10 12:46
Lab Sample ID: STD010 280-15979/4 IC	Client Sample ID:		GC Column: Eclipse+C18	ID: _____
Date Analyzed: 05/18/10 11:00	Lab File ID: pc500E18006.d			
COMPOUND NAME	RETENTION TIME	REASON	ANALYST	DATE
MeFOSA (Surr)	7.32	Poor chromatography	bonnettj	05/20/10 12:46
Lab Sample ID: STD020 280-15979/5 IC	Client Sample ID:		GC Column: Eclipse+C18	ID: _____
Date Analyzed: 05/18/10 11:13	Lab File ID: pc500E18007.d			
COMPOUND NAME	RETENTION TIME	REASON	ANALYST	DATE
1802 PFHxS	6.45	Poor chromatography	bonnettj	05/20/10 12:47
1802 PFHxS (IS)	6.45	Poor chromatography	bonnettj	05/20/10 12:47

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-3403-1

SDG No.:		Analysis Batch Number:	15979
Instrument ID:	LC LCMS5	Client Sample ID:	
Lab Sample ID:	STD100 280-15979/7 IC	Lab File ID:	pc50E18009.d
Date Analyzed:	05/18/10 11:38	GC Column:	Eclipse+C18
COMPOND NAME	RETENTION TIME	MANUAL INTEGRATION	ID:
Perfluorobutane Sulfonate (PFBS)	5.50 Baseline	REASON	ANALYST

Lab Sample ID:	STD200 280-15979/8 IC	Client Sample ID:		GC Column:	Eclipse+C18
Date Analyzed:	05/18/10 11:51	Lab File ID:	pc50E18010.d	GC Column:	Eclipse+C18
COMPOND NAME	RETENTION TIME	MANUAL INTEGRATION	REASON	ANALYST	DATE
Perfluorobutane Sulfonate (PFBS)	5.52 Baseline			bonnettj	05/20/10 12:55
Lab Sample ID:	ICB 280-15979/9	Client Sample ID:		GC Column:	Eclipse+C18
Date Analyzed:	05/18/10 12:04	Lab File ID:	pc50E18011.d	GC Column:	Eclipse+C18
COMPOND NAME	RETENTION TIME	MANUAL INTEGRATION	REASON	ANALYST	DATE
Perfluorotridecanoic Acid (PFTrIA)	7.84 Wrong peak			bonnettj	05/21/10 13:57
Lab Sample ID:	ICV 280-15979/10	Client Sample ID:		GC Column:	Eclipse+C18
Date Analyzed:	05/18/10 12:17	Lab File ID:	pc50E18012.d	GC Column:	Eclipse+C18
COMPOND NAME	RETENTION TIME	MANUAL INTEGRATION	REASON	ANALYST	DATE
Perfluorobutane Sulfonate (PFBS)	5.51 Baseline			bonnettj	05/20/10 12:55

SAMPLE SUMMARY

Client: Dalton Utilities

Job Number: 280-3403-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-3403-1	AB-1 #1	Solid	05/11/2010 1645	05/12/2010 0930
280-3403-2	AB-1 #2	Solid	05/11/2010 1635	05/12/2010 0930

EXECUTIVE SUMMARY - Detections

Client: Dalton Utilities

Job Number: 280-3403-1

Lab Sample ID Analyte	Client Sample ID Result / Qualifier	Reporting Limit	Units	Method
280-3403-1 AB-1 #1				
Perfluorobutane Sulfonate (PFBS)	1000	32	ug/Kg	DV-LC-0012
Perfluorobutanioc acid (PFBA)	170	32	ug/Kg	DV-LC-0012
Perfluorodecanoic acid (PFDA)	570	32	ug/Kg	DV-LC-0012
Perfluorododecanoic acid (PFDaA)	150	80	ug/Kg	DV-LC-0012
Perfluoroheptanoic acid (PFHpA)	71	32	ug/Kg	DV-LC-0012
Perfluorohexanoic acid (PFHxA)	220	32	ug/Kg	DV-LC-0012
Perfluorononanoic acid (PFNA)	110	32	ug/Kg	DV-LC-0012
Perfluoroctane Sulfonamide (FOSA)	210	80	ug/Kg	DV-LC-0012
Perfluoroctanoic acid (PFOA)	460	80	ug/Kg	DV-LC-0012
Perfluoroctane Sulfonate (PFOS)	470	32	ug/Kg	DV-LC-0012
Perfluoropentanoic acid (PFPA)	80	32	ug/Kg	DV-LC-0012
Perfluorotetradecanoic acid (PFTeA)	23	J 80	ug/Kg	DV-LC-0012
Perfluorotridecanoic Acid (PFTriA)	130	80	ug/Kg	DV-LC-0012
Perfluoroundecanoic acid (PFUnA)	330	80	ug/Kg	DV-LC-0012
Percent Moisture	42	0.10	%	D-2216
280-3403-2 AB-1 #2				
Perfluorobutane Sulfonate (PFBS)	410	17	ug/Kg	DV-LC-0012
Perfluorobutanioc acid (PFBA)	110	17	ug/Kg	DV-LC-0012
Perfluorodecanoic acid (PFDA)	390	17	ug/Kg	DV-LC-0012
Perfluorododecanoic acid (PFDaA)	110	42	ug/Kg	DV-LC-0012
Perfluoroheptanoic acid (PFHpA)	51	17	ug/Kg	DV-LC-0012
Perfluorohexane Sulfonate (PFHxS)	12	J 17	ug/Kg	DV-LC-0012
Perfluorohexanoic acid (PFHxA)	220	17	ug/Kg	DV-LC-0012
Perfluorononanoic acid (PFNA)	75	17	ug/Kg	DV-LC-0012
Perfluoroctane Sulfonamide (FOSA)	240	84	ug/Kg	DV-LC-0012
Perfluoroctanoic acid (PFOA)	310	42	ug/Kg	DV-LC-0012
Perfluoroctane Sulfonate (PFOS)	400	17	ug/Kg	DV-LC-0012
Perfluoropentanoic acid (PFPA)	65	17	ug/Kg	DV-LC-0012
Perfluorotetradecanoic acid (PFTeA)	21	J 42	ug/Kg	DV-LC-0012
Perfluorotridecanoic Acid (PFTriA)	80	42	ug/Kg	DV-LC-0012
Perfluoroundecanoic acid (PFUnA)	250	42	ug/Kg	DV-LC-0012
Percent Moisture	42	0.10	%	D-2216

METHOD SUMMARY

Client: Dalton Utilities

Job Number: 280-3403-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Perfluorinated Hydrocarbons	TAL DEN	TAL-DEN DV-LC-0012	
Leaching procedure for PFCs	TAL DEN		TAL-DEN PFC leach
ASTM D-2216	TAL DEN	ASTM D-2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

TAL-DEN = TestAmerica Laboratories, Denver, Facility Standard Operating Procedure.

METHOD / ANALYST SUMMARY

Client: Dalton Utilities

Job Number: 280-3403-1

Method	Analyst	Analyst ID
TAL-DEN DV-LC-0012	Bonnett, Jacquelyn C	JCB
TAL-DEN DV-LC-0012	Meyer, Andrew GC	AGCM
ASTM D-2216	Berry III, Paul B	PBB

Analytical Data

Client: Dalton Utilities

Job Number: 280-3403-1

Client Sample ID: AB-1 #1

Lab Sample ID: 280-3403-1

Client Matrix: Solid

% Moisture: 41.9

Date Sampled: 05/11/2010 1645

Date Received: 05/12/2010 0930

DV-LC-0012 Perfluorinated Hydrocarbons

Method:	DV-LC-0012	Analysis Batch:	280-15981	Instrument ID:	LC_LCMS5
Preparation:	PFC leach	Prep Batch:	280-15209	Lab File ID:	pc50E18021.d
Dilution:	10			Initial Weight/Volume:	10.71 g
Date Analyzed:	05/18/2010 1412			Final Weight/Volume:	50 mL
Date Prepared:	05/13/2010 0900			Injection Volume:	30 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Perfluorobutane Sulfonate (PFBS)		1000		13	32
Perfluorobutanoic acid (PFBA)		170		5.5	32
Perfluorodecanoic acid (PFDA)		570		12	32
Perfluorododecanoic acid (PFDoA)		150		13	80
Perfluoroheptanoic acid (PFHpA)		71		12	32
Perfluorohexane Sulfonate (PFHxS)		ND		12	32
Perfluorohexanoic acid (PFHxA)		220		3.2	32
Perfluorononanoic acid (PFNA)		110		8.0	32
Perfluorooctanoic acid (PFOA)		460		16	80
Perfluorooctane Sulfonate (PFOS)		470		6.0	32
Perfluoropentanoic acid (PFPA)		80		14	32
Perfluorotetradecanoic acid (PFTeA)		23	J	23	80
Perfluorotridecanoic Acid (PFTriA)		130		18	80
Perfluoroundecanoic acid (PFUnA)		330		29	80

Surrogate	%Rec	Qualifier	Acceptance Limits
13C4 PFOA	90		50 - 200
13C4 PFOS	91		50 - 200
13C4 PFBA	97		50 - 200
13C2 PFHxA	87		50 - 200
13C5 PFNA	95		50 - 200
13C2 PFDA	93		50 - 200
13C2 PFUnA	94		50 - 200
13C2 PFDoA	87		50 - 200
18O2 PFHxS	93		50 - 200

Analytical Data

Client: Dalton Utilities

Job Number: 280-3403-1

Client Sample ID: AB-1 #1

Lab Sample ID: 280-3403-1
Client Matrix: Solid

% Moisture: 41.9

Date Sampled: 05/11/2010 1645
Date Received: 05/12/2010 0930**DV-LC-0012 Perfluorinated Hydrocarbons**

Method:	DV-LC-0012	Analysis Batch: 280-18619	Instrument ID:	LC_LCMS3
Preparation:	PFC leach	Prep Batch: 280-15209	Lab File ID:	PC30f04152.d
Dilution:	10		Initial Weight/Volume:	10.71 g
Date Analyzed:	06/05/2010 0208		Final Weight/Volume:	50 mL
Date Prepared:	05/13/2010 0900		Injection Volume:	20 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Perfluoroctane Sulfonamide (FOSA)		210		20	80

Surrogate	%Rec	Qualifier	Acceptance Limits
MeFOSA (Surr)	61		50 - 200

Analytical Data

Client: Dalton Utilities

Job Number: 280-3403-1



Client Sample ID: AB-1 #2

Lab Sample ID: 280-3403-2

Client Matrix: Solid

% Moisture: 41.7

Date Sampled: 05/11/2010 1635

Date Received: 05/12/2010 0930

DV-LC-0012 Perfluorinated Hydrocarbons

Method:	DV-LC-0012	Analysis Batch:	280-15981	Instrument ID:	LC_LCMS5
Preparation:	PFC leach	Prep Batch:	280-15209	Lab File ID:	pc50E18022.d
Dilution:	5.0			Initial Weight/Volume:	10.17 g
Date Analyzed:	05/18/2010 1425			Final Weight/Volume:	50 mL
Date Prepared:	05/13/2010 0900			Injection Volume:	30 uL

Analyte	Dry Wt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Perfluorobutane Sulfonate (PFBS)		410		7.1	17
Perfluorobutanoic acid (PFBA)		110		2.9	17
Perfluorodecanoic acid (PFDA)		390		6.4	17
Perfluorododecanoic acid (PFDoA)		110		6.9	42
Perfluoroheptanoic acid (PFHpA)		51		6.1	17
Perfluorohexane Sulfonate (PFHxS)		12	J	6.5	17
Perfluorohexanoic acid (PFHxA)		220		1.7	17
Perfluorononanoic acid (PFNA)		75		4.2	17
Perfluorooctanoic acid (PFOA)		310		8.6	42
Perfluorooctane Sulfonate (PFOS)		400		3.2	17
Perfluoropentanoic acid (PFPA)		65		7.4	17
Perfluorotetradecanoic acid (PFTeA)		21	J	12	42
Perfluorotridecanoic Acid (PFTriA)		80		9.7	42
Perfluoroundecanoic acid (PFUnA)		250		15	42

Surrogate

	%Rec	Qualifier	Acceptance Limits
13C4 PFOA	72		50 - 200
13C4 PFOS	71		50 - 200
13C4 PFBA	81		50 - 200
13C2 PFHxA	67		50 - 200
13C5 PFNA	81		50 - 200
13C2 PFDA	75		50 - 200
13C2 PFUnA	73		50 - 200
13C2 PFDoA	58		50 - 200
18O2 PFHxS	71		50 - 200

Analytical Data

Client: Dalton Utilities

Job Number: 280-3403-1

Client Sample ID: AB-1 #2

Lab Sample ID: 280-3403-2

Date Sampled: 05/11/2010 1635

Client Matrix: Solid

% Moisture: 41.7

Date Received: 05/12/2010 0930

DV-LC-0012 Perfluorinated Hydrocarbons

Method:	DV-LC-0012	Analysis Batch: 280-18619	Instrument ID:	LC_LCMS3
Preparation:	PFC leach	Prep Batch: 280-15209	Lab File ID:	PC30f04153.d
Dilution:	10		Initial Weight/Volume:	10.17 g
Date Analyzed:	06/05/2010 0213		Final Weight/Volume:	50 mL
Date Prepared:	05/13/2010 0900		Injection Volume:	20 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
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Perfluoroctane Sulfonamide (FOSA)		240		21	84
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Surrogate	%Rec	Qualifier	Acceptance Limits
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MeFOSA (Sur)	63		50 - 200
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Analytical Data

Client: Dalton Utilities

Job Number: 280-3403-1

General Chemistry

Client Sample ID: AB-1 #1

Lab Sample ID: 280-3403-1

Date Sampled: 05/11/2010 1645

Client Matrix: Solid

Date Received: 05/12/2010 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	42	%		0.10	0.10	1.0	D-2216

Analysis Batch: 280-14977

Date Analyzed: 05/12/2010 1430

DryWt Corrected: N

Analytical Data

Client: Dalton Utilities

Job Number: 280-3403-1

General Chemistry

Client Sample ID: AB-1 #2

Lab Sample ID: 280-3403-2

Date Sampled: 05/11/2010 1635

Client Matrix: Solid

Date Received: 05/12/2010 0930

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	42	%		0.10	0.10	1.0	D-2216

Analysis Batch: 280-14977 Date Analyzed: 05/12/2010 1430 DryWt Corrected: N